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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,349	04/18/2006	Takamasa Ishii	03500.103615.	7209
5514 7590 09/06/2007 FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			EXAMINER IGYARTO, CAROLYN	
			ART UNIT 2884	PAPER NUMBER
			MAIL DATE 09/06/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/576,349

Applicant(s)

ISHII ET AL.

Examiner

Carolyn Igyarto

Art Unit

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2007.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-14 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 18 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 26 June 2006 and 12 July 2007.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements submitted on June 26, 2006 and July 12, 2007 have been considered by the Examiner and made of record in the application file.

Response to Amendment

3. The preliminary amendment to the claims filed on April 18, 2006 was accepted and entered.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: There are numerous reference characters listed in the drawings, but not mentioned in the specification. The drawings and specification should be carefully reviewed and errors corrected. Some examples of reference characters in drawings that are not mentioned in the specification are: B, Rs1, Rs2, and C2'. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification

to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance. Figure 1 appears to have the same structure as Figure 11, which is described as being a conventional structure.

Specification

6. The disclosure is objected to because of the following informalities:

7. Section headings should be in upper case.
8. Page 16, line 1 recites "the TFTs 21 and 23 (22)"; instead, perhaps, "the TFTs 21, 22, and 23" or "the TFTs 21-23" should be recited or a remark why "22" is in parenthesis and not fully included.
9. Page 19, lines 4 and 11 recite "kTC1." "k" and "T" should be defined.
10. Page 24, lines 2 and 4 recite the acronyms "MIS" and "PIN." The definition of each acronym should be given for purposes of clarity.

Appropriate correction is required.

Claim Objections

11. Claim 1 is objected to because of the following informalities:

Lines 2 and 4 seem to include limitations that are not separated by a line
indentation as required by 37 CFR 1.75.

Line 10 recites "of the semiconductor element." Previously "semiconductor
elements" is recited. The Examiner suggests the following possibilities:

"of the semiconductor elements" or "of a semiconductor element."

Appropriate correction is required.
12. Claim 7 is objected to because of the following informalities: line 2 recites the
limitation "the two signal reading circuits". There is insufficient antecedent basis for this
limitation in the claim. Appropriate correction is required.
13. Claim 8 is objected to because of the following informalities:

Line 5 seems to include limitations that are not separated by a line indentation as required by 37 CFR 1.75.

The use of "respectively" in line 7 should be omitted.

Line 7 recites "semiconductor element", which lacks antecedent basis.

Line 8 recites "the signal reading wirings." Signal reading wirings have not previously been recited.

Line 9 recites "the semiconductor device." Semiconductor device has not previously been recited.

14. Appropriate correction is required.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Sauer et al. (US 5,973,311), hereinafter referred to as Sauer.

17. With respect to **claim 1**, Sauer teaches a radiation image pick-up device (col. 1, lines 21-22, 50-54, and 65-67) comprising:

a plurality of pixels disposed in matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges (col. 4, lines 17-18); and

Art Unit: 2884

a signal output circuit for outputting signals from the pixels (signal output circuit includes: the circuitry of signal lines 1 and 2, row select lines 1 and 2, column select line 1, output signal line, shift registers 48 and 50, and low resolution switch 24), the radiation image pick-up device being characterized in that:

a plurality of signal reading wirings through which the pixel and the signal output circuit are connected to each other are provided for each pixel (col. 4, lines 34-66), and

in that each of the pixels includes semiconductor elements (photodetector P11; transistors TC11 and TR11; col. 1, line 10) connected to each of the signal reading wirings (Fig. 1), and each of the signal reading wirings is selectable based on an actuation of the semiconductor element (col. 2, lines 23-25; col. 4, lines 64-66).

18. With respect to **claim 2**, Sauer teaches the photoelectric conversion element includes a wavelength conversion member for performing wavelength conversion on incident radiation (col. 13, lines 33-36).

19. With respect to **claim 3**, Sauer teaches the signal reading wirings is freely selectable based on actuation of the semiconductor elements according to a dosage of the radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66).

20. With respect to **claim 4**, Sauer teaches at least one of the semiconductor elements is a source follower (col. 2, lines 15-21).

21. With respect to **claim 5**, Sauer teaches a signal reading circuit for reading out a signal from the pixel is provided to each of the signal reading wirings (col.7, lines 39-48).

22. With respect to **claim 6**, Sauer teaches a signal reading circuit for reading out a signal from the pixel is provided in common to the signal reading wirings (col.7, lines 39-48).

23. With respect to **claim 8**, Sauer teaches a radiation image pick-up method (Abstract) comprising:

using a device which includes: a plurality of pixels disposed in matrix, each of the pixels including at least one photoelectric conversion element for converting incident radiation into electric charges (col. 4, lines 17-18); and a signal output circuit for outputting signals from the pixels, the radiation image pick-up method being characterized in that (signal output circuit includes: the circuitry of signal lines 1 and 2, row select lines 1 and 2, column select line 1, output signal line, shift registers 48 and 50, and low resolution switch 24):

said device includes respectively semiconductor element (photodetector P11; transistors TC11 and TR11; col. 1, line 10) connected to each of the signal reading wirings (Fig. 1), and

the semiconductor device is operated such that any one of a plurality of signal reading wirings which are provided for each pixel and through which the corresponding pixel and the signal output circuit are connected to each

other is selected and used in correspondence to a photographing mode to be used (col. 2, lines 23-25; col. 4, lines 64-66).

24. With respect to **claim 9**, Sauer teaches the photoelectric conversion element performs wavelength conversion on incident radiation (col. 13, lines 33-36), and converts the conversion results into electric charges (col. 1, lines 21-26).

25. With respect to **claim 10**, Sauer teaches the semiconductor device is operated such that any one of the plurality of signal reading wirings is selected in correspondence to magnitude of a dosage of radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66).

26. With respect to **claim 11**, Sauer teaches each of the pixels includes semiconductor elements connected to the plurality of signal reading wirings (col. 4, lines 34-66), and at least one of the semiconductor elements is a source follower (col. 2, lines 15-21), and when in case of the photographing mode involving a low dosage of radiation (low resolution fluoroscopy mode; col. 4, lines 62-64), the signal reading wiring having the source follower is selected (col. 4, line 67 and col. 5, lines 1-4).

27. With respect to **claim 12**, Sauer teaches a radiation image pick-up system, characterized by comprising:

a radiation image pick-up device as claimed in claim 1 (see explanation above);

radiation generation means for applying radiation (inherently a source of x-rays would be included; col. 13, lines 31-36);

selection means for selecting any one of the plurality of signal reading wirings in the radiation image pick-up device in correspondence to magnitude of a

dosage of radiation (col. 1, lines 50-53 and 65-67; col. 2, lines 23-24; col. 4, lines 64-66); and

control means for controlling the application of the radiation by the radiation

generation means and drive of the radiation image pick-up device based on the selection by the selection means (inherently a controller for controlling the x-ray source and the image pick-up device would be included; col. 1, lines 65-67).

28. With respect to **claim 13**, Sauer teaches a photographing switch with which any one of the plurality of signal reading wirings is freely selectable based on an input by an operator (col. 4, lines 62-66; inherently this switch is based on the input of the x-ray system operator), the radiation image pick-up system being characterized in that the selection means selects any one of the signal reading wirings based on input made with the photographing switch (col. 4, lines 64-66).

29. With respect to **claim 14**, Sauer teaches the photographing switch is adapted to be switched ON into a plurality of strokes (on or off of the low resolution switch 24) corresponding to the number of the signal reading wirings (signal line 1 and signal line 2), and the respective strokes correspond to an increase in dosage of radiation in ascending order (col. 1, lines 50-53 and 65-67).

Claim Rejections - 35 USC § 103

30. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

31. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer et al. (US 5,973,311), hereinafter referred to as Sauer, as applied to claim 1 above, and further in view of Hamamatsu Photonics K.K. (WO 03/049190), using Sugiyama et al. (US 2004/0195490) as a translation, hereinafter referred to as Sugiyama.

32. With respect to **claim 7**, Sauer teaches all of the limitations of claim 1, as explained above. If it is held that Sauer does not teach two signal reading circuits are provided. Sugiyama teaches using two signal processing circuits or reading circuits for the benefit of achieving a faster detecting process (Fig. 21; [0005]). Therefore, it would have been obvious to one of ordinary skill at the time of the invention to include two signal reading circuits, as taught by Sugiyama, in the invention taught by Sauer for the benefit of achieving a faster detecting process.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kumagai et al. (US 5,780,884) discloses a solid-state imaging device. Drowley, Clifford I. (US 6,906,302) discloses a photodetector circuit and method thereof.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carolyn Igyarto whose telephone number is (571) 270-


Art Unit: 2884

1286. The examiner can normally be reached on Monday - Thursday, 7:30 A.M. to 5 P.M. E.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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